



NATIONAL ESTUARINE
RESEARCH RESERVE SYSTEM
SCIENCE COLLABORATIVE

National Estuarine Research Reserve System Science Collaborative

FY 2013 RFP Funding Opportunity Preliminary Proposal Preparation Guide

Revised December 3rd, 2012



QUESTIONS?

If you have questions about any aspect of this funding opportunity, please contact one of the NERRS Science Collaborative's funding program managers:

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Important Note

Proposals to the National Estuarine Research Reserve System (NERRS) Science Collaborative FY 2013 Funding Opportunity must demonstrate substantial involvement from NERRS staff.



I. About the NERRS Science Collaborative

The National Estuarine Research Reserve System (NERRS) Science Collaborative puts NERRS-led science to work in coastal communities. Administered by the University of New Hampshire, this program uses a competitive process to identify, fund, and support science-based projects that address local coastal management problems. Projects are selected through annual requests for proposals designed to ensure that researchers and intended users of the science work together to describe science and technology needs related to specific problems, define research questions, design and implement projects using appropriate approaches and methodology, and apply the results.

For more on the NERRS Science Collaborative <http://nerrs.noaa.gov/ScienceCollaborative.aspx>

II. Request for Preliminary Proposals (RFP)

The NERRS Science Collaborative seeks proposals for projects that incorporate collaboration and applied science to address a coastal management problem that has been identified as a priority for a Reserve. By “collaboration,” we mean an explicit and justified plan for the interaction of applied science investigators and intended users throughout the project. For information and resources on collaboration that may be helpful in developing your proposal, please read the *RFP Primer* that begins on page 12 of this guide.

Reserves, and the communities they serve, are on the front lines of a changing climate. Shifting rainfall patterns, extreme storms, changing sea and Great Lakes levels, ocean warming and acidification—climate change manifests in many ways along our coasts. Its influences translate into greater risk of drought, fire, and flooding; more frequent storms with the potential to damage infrastructure and threaten human life; and the loss of habitat to support economically important wildlife. As they look to the future, coastal communities need resources to help them consider how they will address existing problems in light of climate change. Therefore, this RFP seeks to empower Reserves to work with their local communities to address the influences of climate change on a problem related to at least one of the following focus areas: impacts of land use change, habitat change and restoration, management of stormwater, and nonpoint source pollution.

This RFP is open to NERRS staff working in partnership (if appropriate) with applicants from the United States (U.S.) academic, private, or public sectors. Each proposal must designate a fiscal agent. The person in this role must be a project team member from the agency, institution, or friends group that will receive the grant, if awarded. A NERRS staff member may be (but does not have to be) the fiscal agent on the project. Researchers from institutions outside the U.S. may be included on the project but cannot serve as the fiscal agent. Researchers from institutions outside the U.S. may only be included in the budget if they meet certain requirements for receiving federal funds. Please contact us if you have questions about this. Federal employees and institutions are not eligible to receive funding from this RFP, but they can participate as unfunded project team members.

The amount of funding available for this competition will be determined by FY 2013 appropriations. The Science Collaborative does not place upper or lower limits on proposed budgets. Past annual budget requests have ranged between \$200,000 and \$500,000. Proposed projects are limited to one year in duration.



III. Applicable Projects

Proposed projects may be anywhere on the spectrum that connects science to decision-making—from earliest stage research to demonstration and implementation. Projects submitted to this funding opportunity do not have to be new. They can be projects your Reserve is already working on as long as they meet the project requirements. If you have questions about the applicability of your project idea, please contact us.

Examples of project results include data to inform best management practices, protocols, instrumentation, engineering designs, decision support systems, educational programs, trainings, needs assessments, and other information-based tools. Applicable projects include but are not limited to, collaborative problem definition, evaluation of adaptation or other coastal management processes, and the transfer of knowledge generated in a previously funded Science Collaborative project to intended users at Reserves beyond the scope of the initial project.

You may also apply for funding to expand on the objectives of a previously funded Science Collaborative project, as long there is no overlap between what you intended to do and budgeted for in the previous project and the new one.

IV. Project Requirements

Proposed projects must fulfill each of the following requirements:

- A. Address a coastal management problem that is a priority for a Reserve.
- B. Relate to at least one of the following RFP focus areas:
 - 1. Impacts of land use change
 - 2. Habitat change and restoration
 - 3. Management of stormwater
 - 4. Nonpoint source pollution
- C. Address the influence of climate change on the coastal management problem.
- D. Demonstrate significant NERRS involvement in proposal development and project implementation.
- E. Demonstrate that the project will address the coastal management problem by having the right people use sound science. Therefore, the project must integrate applied science and collaboration.

We define “applied science” as science that generates practical solutions using knowledge related to natural and/or built systems (biology, geology, chemistry, engineering, etc.), and/or social systems (policy, planning, resource management, evaluation, needs assessment, education, sociological, organizational, and individual behavior, anthropology, economics, etc.).

We define “collaboration” as an explicit and justified plan for the interaction of applied science investigators and intended users of the science throughout the project.

V. Application & Proposal Evaluation Process

1. Read the *RFP Primer* that begins on page 12 of this guide. In addition to information about the collaboration aspects of your proposal, we've also included a list of five common issues to be aware of as you develop your proposal and a section describing the three proposal phases of this RFP. If you are applying to this RFP, please don't skip this step.
2. Prepare and submit a preliminary proposal using the guidance in this document. The deadline to submit your preliminary proposal to the Science Collaborative is 1 PM ET (1300 hours) on January 23, 2013.
3. Complete preliminary proposals will be reviewed by a multidisciplinary panel comprised of collaboration experts and applied scientists in appropriate disciplines. Based on the outcome of that review, a subset of applicants will be invited to submit a full proposal. All applicants will receive feedback from the preliminary proposal review process.
4. Applicants invited to develop full proposals will be notified by March 6th, 2013. The deadline to submit a full proposal is 1 PM ET (1300 hours) on April 17th, 2013. Complete full proposals will be reviewed by a multidisciplinary panel of collaboration experts and scientists in appropriate disciplines. The Science Collaborative will convene the panel to discuss the proposals and make recommendations for funding. Applicants will be notified of the outcome of the panel's recommendations via email by the end of May 2013.
5. Funded projects will begin in September 2013.

VI. Preliminary Proposal Preparation

This section provides guidance on how to submit a preliminary proposal to this funding opportunity.

In addition to the narrative guidance below, we encourage you to read the evaluation criteria the reviewers will use to evaluate your preliminary proposal, which begins on page 9 of this RFP. And finally, please read the RFP Primer, which begins on page 12 before you begin to develop your narrative.

Preliminary proposals must include components A through H, listed below. Appendices will not be accepted. Proposals that fail to include components A through H will be deemed "incomplete" and eliminated from the competition.

A. Title page

Title pages must be in a standard format. Please use the title page template included in the forms package for this funding opportunity, available at:
<http://www.nerrs.noaa.gov/RCDefault.aspx?ID=612>.

B. Preliminary proposal narrative (six page limit)

Preliminary proposal narratives are not to exceed six, single-spaced pages with one-inch margins formatted in Arial 12-point font. The page limit includes all charts, graphs, and other images. Preliminary proposals must address narrative requirements one through five in the order provided. Please use the headings below; this will facilitate review of your proposal.



1. Coastal management problem
2. Project overview
3. Collaboration objectives and methods
4. Applied science objectives and methods
5. Roles and responsibilities

We have included suggested page limits for each section.

1. Coastal management problem (one to one-and-a-half pages)

Please address the bullets below in the order that best suits the flow of your proposal.

- What is the local coastal management problem your project seeks to address?
- Why is addressing the problem important to the Reserve?
- What are the current barriers to addressing it? Consider research and technology gaps, as well as barriers related to the problem's human dimensions, such as institutional capacity, politics, economics, and cultural values.
- Who are the different groups of users who are impacted by this problem?
- How did you define the problem with intended users?

Please note: Reviewers will want to see that you have thought through the broad range of groups of users appropriate for your project. While it's not necessary to have representatives of all the user groups engaged with the project at this stage, you should demonstrate that you have interacted with a subset of those users to define the problem as part of the development of the preliminary proposal.

2. Project overview (one page)

Please address the bullets below in the order that best suits the flow of your proposal.

- What is your overall goal for the project? Please be specific in terms of the defined problem and what you hope to achieve by the end of this one-year project.
- Briefly describe how you propose to reach this goal.

3. Collaboration objectives and methods (one page)

Please address the bullets below in the order that best suits the flow of your proposal.

- What are your collaboration objectives for the project and how will achieving these objectives contribute to meeting your project goal?
- Describe the methods you will use to meet your collaboration objectives.

Please note: Reviewers will want to see the collaboration methods and framework you will use to engage users and allow them to react to and modify the applied science methods. See the RFP Primer section E, Creating collaboration objectives on page 16.

4. Applied science objectives and methods (one page)

Please address the bullets below in the order that best suits the flow of your proposal.

- What are your applied science objectives for the project and how will achieving these objectives contribute to meeting your project goal?
- Describe the methods you anticipate using to meet your applied science objectives.

Please note: Reviewers will want to see that you have thought through the most likely methods on the

applied science side, but that you have built in flexibility to respond if collaboration with intended users indicates that applied science objectives and methods need to be altered to increase the relevance users.

5. Roles and responsibilities (one to one-and-a-half pages)

Each project must include the following team member positions:

- Project coordinator
- Fiscal agent
- Collaboration lead
- Applied science investigator(s)
- Intended users(s)

Different people must fill the roles of collaboration lead, applied science investigator(s) and intended user(s). These roles require distinct skills and represent diverse perspectives on the project. However, any team member may fill the roles of project coordinator and fiscal agent as long as they have the appropriate skills and experience for these and any other role(s) assigned.

For each position, please answer the following questions:

- Who will fill it?
- What are their specific responsibilities on the project?
- How much time will they spend working on this one-year project (please indicate time in weeks or months)?

Please note: The *curriculum vitae*, résumé, or professional narrative included in the qualifications section for each person listed here must reflect the skills and experience the person needs to fill the role you have described for them. Reviewers will be looking for this connection.

Project coordinator (mandatory)

Coordinates project activities, acts as liaison between project team members, and is accountable to the funder for project results and outcomes. While this position serves as the primary liaison between the project and the Science Collaborative, we reserve the right to communicate with any project team member to ensure that objectives for collaboration and applied science are being met once a project is funded.

Fiscal agent (mandatory)

This role should be filled by a project team member from the agency, institution, or friends group that will receive the grant if the proposal is chosen for funding. The person in this position will regularly review the budget and ensure that the project team is expending the funds as allocated in the proposal.

Collaboration lead (mandatory)

Leads the development and implementation of an explicit and justified plan for the interaction of applied science investigators and intended users throughout the project. For more information on the characteristics of a collaboration lead, see the RFP Primer that begins on page 12.

Applied science investigator(s) (mandatory)

Implements applied science methods.

Intended user representative(s) (mandatory)

Provides perspective on the need for, and use of, the applied science throughout the duration of the project. The intended user(s) listed here must represent the organization(s) or group(s) that intends to use the results of the project.

Please note: We encourage you to describe the intended users that will work closely with the project team in this section. However, in a change from our previous RFPs, we require a letter of commitment from only one of the intended users named here. Additional letters will not be accepted or reviewed. See section E below for guidance on the letter. Intended users may be compensated for their time. The intended users identified here are not meant to be the only ones who participate in your project. Applicants are not expected to identify all of the intended users that may participate in their project. If you have questions about the intended user representative, please contact us.

Additional investigator(s) (optional)

Each project may include additional investigators beyond those required by the Science Collaborative to meet applied science or collaboration objectives.

The following sections C through H will not count toward the six-page limit of your narrative; however, they must be included in your submission.

C. Literature cited

Please include a complete list of all literature cited in the preliminary proposal.

D. Reserve manager form

Applicants must include a form completed by the manager of each Reserve involved in the project. The purpose of the form is to describe the level of NERRS staff involvement in the project and to corroborate that the Reserve manager is aware of his or her staff's commitment to achieving the proposed objectives of the project. This form is not intended to evaluate the quality of the project. The Science Collaborative requires that the Reserve manager form be in a standard format. Please use the template included in the forms package for this funding opportunity, available at:

<http://www.nerrs.noaa.gov/RCDefault.aspx?ID=612>

E. Intended user letter of commitment

You must include a letter from one intended user representative listed in the "Roles and Responsibilities" section of your preliminary proposal. You may list more than one intended user representative in the Roles and Responsibilities section but we will only accept one letter of commitment. The letter must include a description of the intended user's decision-making capacity as it relates to the identified coastal management problem and answer the following questions: How will this project increase the intended user's capacity, or that of their organizations, to address the identified problem? What are they committed to doing on the project? What do they expect in return?

F. Budget forms

You must submit a one-year budget form for your project. All project team members (including students) from the fiscal agent's institution should be listed in section A of the budget form. Project team members from institutions other than that of the fiscal agent must be listed as subcontractors in section F. If applicable to your proposal, the budget for supplies and services related to meetings, workshops, and/or communications activities and products should be listed under the "expendable

supplies and services” budget line. Permanent equipment is designated for single items over \$5,000. Equipment and supplies that do not meet that criterion should be listed under “expendable supplies and services.” The Science Collaborative requires that the budget form be in a standard format, as provided in the form package available at: <http://www.nerrs.noaa.gov/RCDefault.aspx?ID=612>

G. Budget justification

Provide a detailed budget justification that explains each item in your budget form, including salary, tuition, subcontracts, fringe benefits, equipment, supplies, travel, costs associated with implementing applied science and collaboration methods, and indirect costs. Describe the time commitment and budget for each person listed in the “Roles and Responsibilities” section of your preliminary proposal. If a project team member is not included in the budget, please describe how he or she will be supported so that they are able to execute their responsibilities on the project. Include the federally negotiated indirect cost rate of the fiscal agent’s institution and the budget items to which that rate is applied.

H. Qualifications

Please include a *curriculum vitae*, résumé, or professional narrative (maximum length of two pages) for each project team member described in the “Roles and Responsibilities” section of your preliminary proposal. Please make sure that the qualifications you include here reflect the skills and experience the person needs to fill the role you have described for them. Reviewers will be looking for this connection.

VII. Preliminary Proposal Submission

The deadline to submit your preliminary proposal to the NERRS Science Collaborative is 1 PM ET (1300 hours) on January 23, 2013. Your submission MUST be in the form of a single PDF with a file size not to exceed 5 MB. Proposals sent in any other file format or in a larger size will not be accepted. Preliminary proposals will not be accepted after the deadline.

Please email your preliminary proposal as a single PDF to: justine.stadler@unh.edu.

You must also send one signed hard copy of your preliminary proposal (printed double-sided and identical to the electronic version), postmarked no later than January 30th, 2013 to the Science Collaborative’s Program Coordinator:

Cindy Tufts
NERRS Science Collaborative
Gregg Hall, Suite 130
35 Colovos Road, Durham, NH 03824

VIII. Preliminary Proposal Evaluation

All preliminary proposals will undergo an initial review to make sure they are complete. Incomplete preliminary proposals will be eliminated from the competition without further review and the applicant will be notified.

Preliminary proposals will be deemed incomplete for failure to do one or more of the following:



- Follow the narrative structure as outlined;
- Include all required information in sections A through H;
- Follow directions with regard to formatting and submission procedures.

Complete preliminary proposals will be reviewed by a multidisciplinary panel comprised of collaboration experts and applied scientists in appropriate disciplines. The panel will use the weighted review criteria listed below to determine which applicants will be invited to submit a full proposal.

The questions under each weighted criteria category are designated “all reviewers” if both the collaboration and applied science reviewers will respond to the same questions. Otherwise, the questions in each section will be directed to either collaboration reviewers or applied science reviewers in order to focus their responses on those aspects of your preliminary proposal that best match their expertise.

Applicants will be notified of the outcome of the panel’s review via email by February 11th, 2013.

1. Coastal management problem (15%)

All reviewers

- Is the problem well described? (Consider the problem description, identified barriers to addressing the problem, groups of users impacted by it and the interactions with intended users that were used to define it.)
- Does the described problem meet project requirements related to this RFP’s focus areas, and the level of priority for the Reserve?

2. Project overview (15%)

All reviewers

- Does the proposal demonstrate that the project described will effectively address the problem?
- Is the proposed project scaled to meet the stated goal in one year?

3. Objectives and methods to meet project goals (40%)

Collaboration reviewers

- Are the stated collaboration objectives likely to contribute to achieving the project goal?
- Are the collaboration methods well described and justified?

Applied science reviewers

- Are the stated applied science objectives likely to contribute to achieving the project goal?
- Are the applied science methods well described and justified?

4. Roles and responsibilities (20%)

All reviewers

- Are NERRS staff members playing a significant role in the development and implementation of this project? (Consider the Roles and Responsibilities section and the letter from the Reserve manager.)

Collaboration reviewers

- Does the collaboration lead have the skills and experience to carry out their role on the project? (Please consider the collaboration objectives and methods and the skills and experience listed in section H, Qualifications.)
- Do the fiscal agent, project coordinator, and if applicable, additional investigators working on collaboration have the skills and experience to fill their roles and contribute to meeting the project goal?
- Are there skill sets missing related to meeting collaboration objectives?
- Is the intended user(s) on the team appropriate in terms of the described problem and goal for the project? (Please consider the description of the intended user(s) here and the letter of commitment included in section E.)

Applied Science reviewers

- Does the applied science investigator(s) have the skills and experience to carry out their role on the project? (Please consider the applied science objectives and methods and the skills and experience listed in section H, Qualifications.)
- Do the fiscal agent, project coordinator, and if applicable, additional investigators working on applied science have the skills and experience to fill their roles and contribute to meeting the project goals?
- Are there skill sets missing related to meeting applied science objectives?
- Is the intended user(s) on the team appropriate in terms of the described problem and goals for the project? (Please consider the description of the intended user(s) here and the letter of commitment included in section E.)

5. Budget (10%)

Collaboration reviewers

Does the budget allocate sufficient funds to meet the project goal? (Please consider the budget allotted to implement collaboration methods and support for the project team.)

Applied science reviewers

Does the budget allocate sufficient funds to meet the project goal? (Please consider the budget allotted to implement applied science methods and support for the project team.)

IX. Proprietary Information & Intellectual Property

Disclosure of patentable ideas, trade secrets, and privileged, confidential, commercial, or financial information may harm an applicant's chances to secure future patents, trademarks, or copyrights.

Proprietary information of this kind should be included in proposals only when it is necessary to convey an understanding of the proposed project. Applicants must mark proprietary information clearly in the proposal, using appropriate labels, such as, "The following is (proprietary or confidential) information that (name of proposing organization) requests not be released to persons outside the NERRS Science Collaborative, except for purposes of review and evaluation." In addition, the title page you

will submit with your proposal includes a confidentiality statement. Please review it and contact us if you have questions.

Applicants are encouraged to protect the intellectual property of ideas at the proposal preparation stage, if appropriate. This could allow you to talk freely about ideas and avoid the inadvertent loss of intellectual property rights. If applicable, please consult your institution's technology transfer or intellectual property office to determine the best way to protect your intellectual property.

X. Science Collaborative RFP Primer

This primer offers resources related to the integration of collaboration and applied science. Potential applicants may find this primer helpful in developing a proposal to the NERRS Science Collaborative's FY 2013 Request for Proposals. This primer is meant as a reference only.

This primer includes the following sections:

- A. Five things to look out for as you develop your Science Collaborative proposal
- B. 2013 RFP proposal phases
- C. Why collaboration?
- D. Key characteristics of a collaboration lead
- E. Creating collaboration objectives
- F. Key characteristics of collaboration methods
- G. Collaboration resources
- H. Models of collaboration

A. Five things to look out for as you develop your Science Collaborative proposal

Over the last three years we've seen certain issues trip up applicants and reduce the competitiveness of their proposals. We want to share what we've learned and hopefully help you increase your chances of success. The top five issues are below. We have listed sections of the Primer that may be helpful in avoiding these pitfalls under each one.

1. The proposal doesn't include sufficient collaboration expertise. This is often coupled with not involving the person with that expertise at the beginning of the proposal development. Please see section D, Key characteristics of a collaboration lead, section E, Creating collaboration objectives, and F, Key characteristics of collaboration methods.
2. The proposal demonstrates that the team has made assumptions about what their intended users need without consulting them. Please see section C, Why collaboration?
3. The collaboration objectives and methods section of the proposal is noticeably less detailed and rigorous than the applied science section of the proposal. Please see section E, Creating collaboration objectives and F, Key characteristics of collaboration methods.
4. The applied science and collaboration methods don't seem to connect and integrate, but rather proceed on parallel tracks. Please see section F, Key characteristics of collaboration methods.
5. The proposal doesn't allocate enough funding to the collaboration methods outlined in the proposal. This does not inspire confidence in the reviewers that the methods will be carried out. Please see section F, Key characteristics of collaboration methods.

If you have questions about any of the information included here or how it might apply to your proposal idea, please contact us to talk about it.

B. 2013 proposal phases

The 2013 Science Collaborative RFP has three phases (pre-proposal, full proposal, and funding recommendation/contingency funding). This section of the Primer describes the purpose of each phase.

Phase 1: Preliminary Proposal

The purpose of the preliminary proposal is to give the reviewers enough information to make a recommendation on whether the proposal should go on to the next phase or not. We know that developing a full proposal is a lot of work so we want to make sure that based on the amount of funding we have to award, 80 to 90% of full proposals can be funded. That means that the preliminary proposal phase is the one in which the greatest number of proposals will be eliminated.

The other purpose of the preliminary proposal is to give the reviewers enough information to provide feedback on ways to strengthen the project (either in the full proposal or in a future submission). For this RFP, which requests proposals for one-year projects, we have made an effort to cut back on the number of narrative requirements without diminishing the reviewers' ability to provide feedback.

Phase 2: Full Proposal

If your team is invited to submit a full proposal you will need to expand and provide more detail in each of the narrative sections. You will also have the reviewers' feedback to respond to. All of this must be done within the narrative requirements of the full proposal RFP. You should also keep in mind that full proposal reviewers may not have been privy to your preliminary proposal or the reviews of your preliminary proposal. In other words, the full proposal narrative must be able to stand on its own without the reviewer having read the previous reviews.

Phase 3: Funding recommendations/ contingency funding

In previous RFPs we used a rebuttal phase. The rebuttal was the applicant's opportunity to respond to the full proposal reviews. While we think this is an effective tool for clarifying issues the reviewers bring up and making improvements to the proposal based on their suggestions, it is also time consuming and work intensive for the applicant and the reviewers.

This year in an effort to streamline the process a bit we are adopting a different mechanism. As usual, two reviewers with expertise in applied science and two with expertise in collaboration will review your full proposal. The Science Collaborative will convene the reviewers to discuss each proposal and make recommendations for funding.

We will also ask the reviewers to identify any changes they feel are critical to the success of the project. If they don't identify any critical changes, the proposal will be recommended for funding. However, if they determine that there are changes that can improve the project and be accomplished by the team in a reasonable amount of time and without additional funding, we will contact you and give you the option of receiving funding contingent on making the changes the reviewers described.

C. Why collaboration?

One comment we frequently hear from applicants to our program is “What do you mean we have to collaborate? We already do that!” And in some respects they do. They might be applied scientists embedded in management organizations, or academic scientists who work with their peers in other disciplines, or researchers who educate the general public. Reaching across disciplinary and organizational boundaries is certainly a form of collaboration, and an important one, but at the NERRS Science Collaborative we have a different definition.

By “collaboration,” we mean an explicit and justified plan for the interaction of applied scientists and the intended users of science throughout a research project—from the definition of a problem throughout the implementation of that project’s results. This definition of collaboration guides our funding opportunities.

Why? Our program is focused on putting NERRS-led science to work in coastal communities, and there is considerable evidence to support the idea that involving intended users throughout the scientific process increases the likelihood that the knowledge being generated will be applied. There are straightforward reasons for this that have been identified through the application and rigorous evaluation of collaboration methodologies:

- Intended users are more aware of the science;
- Science focuses on questions that are a high priority for intended users;
- Science is informed by the knowledge possessed by intended users;
- Science generates knowledge in a way that is practical and useable (e.g., the timing is right, the level of detail is appropriate, economic factors have been considered);
- Intended users trust the science.

Successful collaboration as defined above requires a specific set of skills. To be competitive, your proposal must demonstrate knowledge and skill related to collaboration. Therefore, we encourage applicants to involve the collaboration lead as early as possible in proposal development.

The publications listed below provide more information on collaboration.

National Research Council. 2009. *Informing Decisions in a Changing Climate. Panel on Strategies and Methods for Climate-Related Decision Support, Committee on the Human Dimensions of Global Change. Division of Behavioral and Social Sciences and Education.* Washington, DC: The National Academies Press. (Chapter 2 Effective Decision Support,” is most relevant to collaboration methods.) http://www.nap.edu/catalog.php?record_id=12626

Cash, D.W., W.C. Clark, F. Alcock, N.M. Dickson, N. Eckley, D.H. Guston, J. Jager, R.B. Mitchell. 2003. Knowledge systems for sustainable development. *Publications of the National Academies of Science*. 100(14): 8086-8091. <http://www.pnas.org/content/100/14/8086.abstract>

McNie, E.C. 2007. Reconciling the supply of scientific information with user demands: an analysis of the problem and review of the literature. *Environmental Science and Policy* 10: 17-38. http://sciencepolicy.colorado.edu/admin/publication_files/resource-2486-2007.03.pdf

SPARC. 2010. Usable science: A handbook for science policy decision makers. A Report Published by Science Policy Assessment and Research on Climate.
http://cstpr.colorado.edu/sparc/outreach/sparc_handbook/brochure.pdf

D. Key characteristics of a collaboration lead

The NERRS Science Collaborative's FY 2013 RFP requires that all project teams include a collaboration lead. This person is responsible for balancing the perspectives of the applied science investigators and intended users throughout the project. Working with the rest of the project team, they lead the development of the collaboration objectives and the development and implementation of the collaboration methods for meeting those objectives.

The collaboration lead should have the appropriate experience and skill to design and implement collaboration methods that are specific to the coastal management problem to be addressed. However, just as with an applied science investigator, if the collaboration lead does not have all of the specific expertise required for a particular project, other personnel with those skills should be included on the team as additional investigators.

In many cases, there is a person with these skills on staff at your Reserve. If not, or if there is a person who has some of the skills but could use some help in developing collaboration methods specific to the proposed problem, consider engaging a "collaboration advisor" who is an expert in developing collaboration methods. He/she may be a collaboration process practitioner or an academic. (Often times, these people have web sites that mention phrases like "participatory processes," "public engagement," or "environmental decision making.")

This person may not be familiar with your local community so it may not make sense for them to be the collaboration lead, but they can help plan and evaluate the collaboration process. In this scenario, the collaboration lead would still do the bulk of the actual implementation of the methods but they'd have the advisor to help guide the process. The advisor role can add a layer of "check and balance" and collaboration capacity building. In our experience, people in this role are usually on the project for about one month per year.

We have compiled examples of the kinds of collaboration skills and knowledge that may be important to have on the project team. Please do not consider the following to be a list of skills and knowledge required for all projects—the needs of your project will depend on the problem to be addressed and the intended users involved:

- Familiarity with different collaboration methods/models (See "Key characteristics of collaboration methods" on page 17);
- Needs assessment;
- Setting ground rules for group meetings;
- Determining who will participate in collaboration activities;
- Ensuring that participants have an equal opportunity to provide input;
- Facilitation;

- Evaluation of feedback from participants;
- Working with project team members to integrate feedback into the project;
- Evaluation of progress toward meeting collaboration objectives;
- Determining when to make mid-course corrections to better meet collaboration objectives;
- Group decision-making strategies;
- Conflict resolution.

You may be wondering where to find people with the appropriate experience and skills to fill the collaboration lead position for your project. We have observed that people come by this capacity in different ways (just as they do in other sciences).

There are “practitioners” trained to connect science and decision-making around issues and have years of experience in doing so—people like NERRS Coastal Training Program coordinators, Sea Grant and Land Grant Extension staff, and private-sector consultants.

There are also “scholar practitioners”—folks who are trained to both study and implement collaboration methodologies. They are based at universities or colleges, often in departments such as public policy, natural resources, geography, planning, environmental studies, sociology, and sustainability.

E. Creating collaboration objectives

The NERRS Science Collaborative’s FY 2013 RFP calls for proposals to include objectives for collaboration that state specifically what you hope to achieve through the integration of applied science and intended user perspectives throughout the project. Collaboration objectives are similar to those you will be creating for the applied science component of your project in one important way—they should link to your project’s overall goals and increase the likelihood these goals will be achieved.

Collaboration objectives must be specific to the coastal management problem your team is addressing and the intended users involved. The choice of objectives and how they are scaled to fit the specifics of the project must be determined with the guidance of the collaboration lead and feedback from the rest of the project team. While there is not a pre-established set of objectives to fit all proposals, we provide the following broad objectives by way of example:

- The problems, and approaches to addressing them, are jointly defined and created by applied science investigators and intended users. A key component of this is that information users learn from information producers and vice versa.
- The problem definition and research plan is relevant to the particular contexts of the intended users.
- The applied science data that are used to define the problem and the applied science data that are generated by the project are viewed as high quality and credible by intended users.

The references below provide more information on collaboration objectives:

Mandarano, L.A. 2008. Evaluating collaborative environmental planning outputs and outcomes: restoring and protecting habitat and the New York-New Jersey Harbor Estuary Program. *Journal of*

Planning Education and Research. 27: 456.
<http://jpe.sagepub.com/content/27/4/456.short>

Conley, A. and M.A. Moote. 2003. Evaluating collaborative natural resource management. *Society and Natural Resources*. 16:371-386.
<http://library.eri.nau.edu/gsd/collect/erilibra/import/ConleyAndMoote.2003.EvaluatingCollaborativenaturalResourceManagement.pdf>

Burgess, J. and J. Chilvers. 2006. Upping the ante: a conceptual framework for designing and evaluating participatory technology assessments. *Science and Public Policy*. 33(10): 713-728.
<http://spp.oxfordjournals.org/content/33/10/713.abstract>

F. Key characteristics of collaboration methods

The NERRS Science Collaborative's FY 2013 RFP calls for proposals that include collaboration methods that are appropriate for the specific coastal management problem your team is addressing and the intended users involved. As with your collaboration objectives, the choice of methods for collaboration (and how they are scaled to fit your project) must be determined with the guidance of the collaboration lead and feedback from the project team.

The methods also must have enough detail for the collaboration experts reviewing your proposal to be able to assess their validity. Having a detailed description of collaboration methods is essential for your proposal to be competitive. There is no universal list of details that you should use to describe your methodology, but we can offer examples of the kinds of things that should be accounted for in your description:

- A clear and well-supported justification (based on experience and/or relevant literature) for the collaboration methods you have chosen;
- Specific plans for how often applied science investigators and intended users interact;
- Specific plans for how those interactions will occur (Who will be involved? How will barriers to effective participation be overcome? How will decisions be made? How will disagreements be handled?);
- A plan for how you will evaluate whether you are meeting your collaboration objectives;
- A plan for how resources to support activities associated with collaboration will be allocated; this may be reflected in the budget, personnel on the project, and the timeline*.

*A project that includes collaboration takes longer than a pure applied science project. Based on our experience, most applicants tend to greatly underestimate the amount of time it takes to integrate collaboration into the applied science timeline. We encourage you to keep this in mind as you make decisions about project goals and how to scale collaboration and applied science objectives to be accomplished in one year.

G. Collaboration resources

We have compiled the following list of additional resources on collaboration as a reference for applicants to our FY 2013 RFP.

Publications

Cockerill K., H. Passell, V. Tidwell. 2006. Cooperative modeling: building bridges between science and the public. *Journal of the American Water Resources Association*. 42(2): 457-471.

Daniels, SE and GB Walker. 2001. Working through environmental conflict: the collaborative learning approach. Praeger Publishers. Westport, CT.

Feurt, Chris. 2012. Working together to get things done: Collaborative Learning training. This is the customized participant workbook for the Collaborative Learning training Dr. Feurt delivered at the North Carolina NERR in the fall of 2012.

http://nerrs.noaa.gov/Doc/PDF/Science/NC_workbook2.pdf

Gregory R, Failing L, Harstone M, Long G, McDaniels T and D Ohlson. 2012. Structured decision making: a practical guide to environmental management choices. West Sussex, UK. Wiley-Blackwell Publishers.

Jacobs, K.L., (2002), *Connecting Science, Policy and Decision-Making: A Handbook for Researchers and Science Agencies*, National Oceanic and Atmospheric Administration, Office of Global Programs, Silver Spring, Maryland.

<http://ciceet.unh.edu/resources/jacobs-2002.pdf>

Lynam, T, W. de Jong, D. Sheil, T. Kusumanto, and K. Evans. 2007. A review of tools for incorporating community knowledge, preferences, and values into decision making in natural resources management. *Ecology and Society*. 12(1): 5.

<http://www.ecologyandsociety.org/vol12/iss1/art5/>

Von Korff, Y., P. d'Aquino, K. A. Daniell, and R. Bijlsma. 2010. Designing participation processes for water management and beyond. *Ecology and Society* 15(3): 1.

<http://www.ecologyandsociety.org/vol15/iss3/art1/>

Zorrilla, P., G. Carmona, Á. De la Hera, C. Varela-Ortega, P. Martínez-Santos, J. Bromley and H. Jorgen Henriksen. 2009. Evaluation of bayesian networks as a tool for participatory water resources management: application to the upper Guadiana basin in Spain. *Ecology and Society* 15(3): 12.

<http://www.ecologyandsociety.org/vol15/iss3/art12/>

H. Models of Collaboration

The following are examples of collaboration models that have been applied effectively to address coastal management problems. While there are subtle differences between these approaches, all provide explicit mechanisms to integrate a variety of perspectives—including those of project investigators and intended users—at critical stages of the project.

This list is just a subset of the models that exist and we provide them by way of example, not endorsement. The collaboration lead (with feedback from the rest of the team) should be able to determine whether one of these or another approach is the best collaboration model for your proposal.

- Consensus Building & Joint Fact Finding
<http://web.mit.edu/dusp/epp/music/wwd/JointFactFinding.html>
- Collaborative Learning Model
oregonstate.edu/instruct/comm440-540/CL2pager.htm
—or— http://ciceet.unh.edu/living_coasts/projects/pdf/CLGuide_11-04-08.pdf

- Structured Decision Making
www.structureddecisionmaking.org/steps.htm